UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,709	03/30/2001	Ananthan K. Pillai	EMC-005PUS	8052

22494 7590 10/07/2003		EXAMINER	
DALY, CROWLEY & MOFFORD, LLP		NAMAZI, MEHDI	

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ART UNIT	PAPER NUMBER
2188	

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _30 March 2001_ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under _Ex parte Quayle_, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-16_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-9 and 11-16_ is/are rejected.

7)☒ Claim(s) _10_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _30 March 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____ .

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

     a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1.   This office action is in response to the application filed March 30, 2001.

Information Disclosure Statement

2.   The examiner requests, in response to this Office action, any reference(s) known

to qualify as prior art under 35 U.S.C. sections 102 or 103 with respect to the instant

claims. That is, any prior art similar to the instant claimed invention that could

reasonably be used in a 102/103 rejection. <u>This request does not require applicant to

perform a search</u>. This request may be fulfilled by asking the attorney(s) of record

handling prosecution and the inventor(s)/assignee for references qualifying as prior art.

A simple statement that the query has been made and no prior art found is sufficient to

fulfill the request. Otherwise, a discussion of why the reference(s) qualifies as prior art

with respect to the claims is requested.

Claim Objections

3.   Claim 13 is objected to because of the following informalities:

    As per claim 13, the dependency of claim 13 on independent claim 11 should be

change to claim 12, because claim 13 is a system claim and claim 11 is a method claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the
United States before the invention thereof by the applicant for patent, or on an international application
by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this
title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior

to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 6, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by

Cabrera et al. (Cabrera) (U.S. Patent No. 6,553,387).

As per claims 1, 6, and 12, Cabrera teaches a method of backing up and

restoring data in a computer system, the method comprising:

defining a logical backup object (col. 1, lines 61);

specifying one or more collapsed extends (col. 8, lines 25-27, fig. 2, disks 2, and

3) (where stripe or collapsed extents is comprising of plurality of extents); and

recording details of the collapsed extends (col. 8, lines 33-38).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 2-5, 7-11, and 13-16 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Cabrera et al. (Cabrera) (U.S. Patent No. 6,553,387), and further in

view of West et al. (U.S. Patent No. 6,446,175) (West).

As per claims 2, and 11, Cabrera teaches the claimed invention as detailed above in

previous paragraph, but fails to teach specifying starting data movement between a host

and the backup and restore system, and monitoring data movement .

West teaches storing and retrieving data to and from a tape backup system that

is located remotely from primary host system (abstract).

Therefore, it would have been obvious to one ordinary skill in the art to modify

the work of Cabrera, because west teaches data movement by backing up data to

backup system, in order to safeguard corporate data, hardware failure, and industrial

sabotage(col. 1, lines 21-33).

As per claim 3, West teaches receiving a completed signal, in response to the

completed signal, halting the monitoring of the data movement (any control signal for

backing up data follows by signals for which the backup or restoring data has been

completed, col. 4, lines 5 – 9).

As per claim 4, West, and Cabrera teach repeatedly defining a logical backup

Object, specifying extents, starting data movement, and recording details of the

specified extents and monitoring data movement from a first storage unit to a second

storage unit until all data are transferred to the second storage unit (west, col. 4, lines 3-

13, Cabrera, col. 8, lines 10-13).

As per claims 5, 8, and15, West teaches a method of restoring data from a

backup and restore system to a host, the method comprising: creating empty objects on

host to restore into (col. 4, lines 3-13), discovering the extents of the empty objects (col.

4, lines 14-17), reading the extends of the backup objects (col. 4, lines 17-22).

As per claims 5, 8, and 15 West teaches the claimed invention as detailed above

in previous paragraph, but fails to teach specifying a mapping from backup extents to

restore extents wherein at least one of the extents corresponds to a collapsed extent.

Cabrera teaches a storage system with plurality of disks, wherein each

disk comprises of one or plurality of volume (each volume consists of single physical

extents, however, the volume may occupy an entire disk or only a portion of the disk,

and stripe without the volume consists of at least two extents)(col. 8, lines 12-14, 21-

30), and mirroring the volume consists of at least two extents. The extents fully

replicate all data (col. 8, lines 33-35).

Therefore, it would have been obvious to one ordinary skill in the art to modify

the work of West, because Cabrera teaches mirroring the volume consists of at least

two extents, where extents fully replicate all data, and mirroring two, three, or more

disks of equal size will yield a volume with size equal to that of a single extent, in order

to avoid losing all data, because loss of one disk does not cause any loss of data since there is at least one disk remaining (col. 8, lines 37-39).

As per claim 7, Cabrera teaches collapsing the extents comprises: Identifying a pattern in the actual extents discovered on the primary storage system, and generating a representation of files specified by the actual extents which is more compact than the representation provided by the actual extents and defining tile representation as a collapsed extent (col. 8, lines 10-13).

As per claims 9, and 14, Cabrera teaches specifying a mapping comprises specifying pairs of extents, which identify the backup extents and the restore extents (col. 8, lines 5-13).

As per claims 13, and 16, West teaches means for logically restoring a logical element from a segment of storage on the primary storage system (col. 16, lines 31-44).

Allowable Subject Matter

7.   Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehdi Namazi whose telephone number is 703-306-2758. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 703-306-2903. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

Mehdi Namazi.
Examiner
Art Unit 2188

September 24, 2003

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER
TC 2100
9/30/03